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Título da Palestra: "The development of the comprehensive lidar station in Yanqing and upper atmospheric study with lidar data"

Palestrante Convidado da Sessão Física e Química da Atmosfera Neutra: Terça-feira, 23 de março de 2021, das 14h20 às 15h00

Resumo: A lidar station was constructed in 2009 in Yanqing (40.5°N, 116.0°E), under the support of Chinese Meridian Project. This lidar is a dual -wavelength lidar, mainly for sodium and atmospheric density observations. The signal noise ratio of this lidar is so high, and then the observations with high spatial or temporal resolutions have been done. Later, based on this lidar, we successfully get the daytime sodium atom layer measurements, as well as the potassium layer detection. Otherwise, under the support of NSFC of China and the State Key Lab, an all solid sodium temperature/wind lidar and a Doppler wind lidar were also developed in recent years. And now we are working on the Ni, Ca+ and Ca layers detection with a new telescope and lasers. Thus a comprehensive lidar station has been developed in Yanqing. Very large amounts data have been obtained by the above lidars, and upper atmospheric study was done with these data. The study mainly includes the properties of mental layers study and gravity wave study: A series of low-thermospheric sodium layer cases were detected by Yanqing lidar and it aroused people`s interest worldwide to study sodium layers at high altitudes; The maximum of the seasonal variation of potassium layer density is in winter, different with other potassium lidar observations; The gravity wave activity above Yanqing was obtained and was compared with other lidar results in China. Until now, based upon Yanqing lidar data, more than 30 papers has been published.